Two new species of Syrphidae (Diptera) from Australia

[Zwei neue Schwebfliegenarten (Diptera, Syrphidae) aus Australien]

by
Mary CARVER and F. Christian THOMPSON

Canberra (Australia) Washington (USA)

Abstract Two new species of flower flies (Diptera: Syrphidae) are described from Australia. These are: ***Allograpta alamacula* CARVER spec. nov.** from Queensland and New South Wales, and ***Hemilampra dichoptica* THOMPSON spec. nov.** from New South Wales.

Key words Syrphidae, *Allograpta*, *Hemilampra*, new species, Australia

Zusammenfassung Zwei neue Schwebfliegenarten (Diptera: Syrphidae) werden aus Australien beschrieben: ***Allograpta alamacula* CARVER spec. nov** aus Queensland und New South Wales und ***Hemilampra dichoptica* THOMPSON spec. nov** aus New South Wales.

Stichwörter Syrphidae, *Allograpta*, *Hemilampra*, neue Arten, Australien

Introduction

The Australian syrphid fauna has not been treated comprehensively since the work of FERGUSON (1926a, b) and HARDY (1921, 1933), there having been only a few scattered revisions and species descriptions subsequently. While preparing the treatment of the flower flies for the *Catalog of Diptera of the Australasian and Oceanian Regions* (THOMPSON & VOCKEROTH 1989), FCT reviewed all the available types of the Syrphidae of the regions, and recognized many undescribed species and the need to erect several new genera. These observations were summarized in a circulated but unpublished manuscript (THOMPSON 1995). Two of these species are herein validated to make the names available for the research of others.

Materials and methods

All measurements refer to maximum dimensions, and are in millimetres. The morphological terminology of THOMPSON (1999) is used.

Abbreviations: ANIC = Australian National Insect Collection, CSIRO, Canberra, ACT; BMNH = The Natural History Museum, London; USNM = National Museum of Natural History, Washington, D. C.

Systematic account

Allograpta alamacula CARVER spec. nov.

(Figs 1–2)

Allograpta spec. nov. C of VOCKEROTH (1980) [manuscript].
Eosphaerophoria spec. nov. of THOMPSON (1995) [unpublished manuscript name]. CARVER & REID (1996: 16–17).

Types. AUSTRALIA, **Queensland**: holotype male, 27°.28'S 15°3.2'E, Indooroophilly, 24.vii.1996, P. DE BARRO, ex. *Aleurocanthus t-signatus* (MASKELL) (ANIC). Paratypes: AUSTRALIA. **Queensland**: female, Clayton Gully, 2.5 miles East of Cunningham's Gap, 1.vi.1966, Z. LEIPA (ANIC). **New South Wales**: 2 males, Sydney, Wahroonga, 24.x.1926 (ANIC, USNM); male, Macquarie Pass, 9.x.1969, COMMON & UPTON, Light Trap (ANIC).

Adult. Head. Face [Facial structure as in type species, *obliqua* SAY], not produced, with low tubercle, yellow except narrow brownish-black medial vitta which does not reach antennal bases, white pilose;

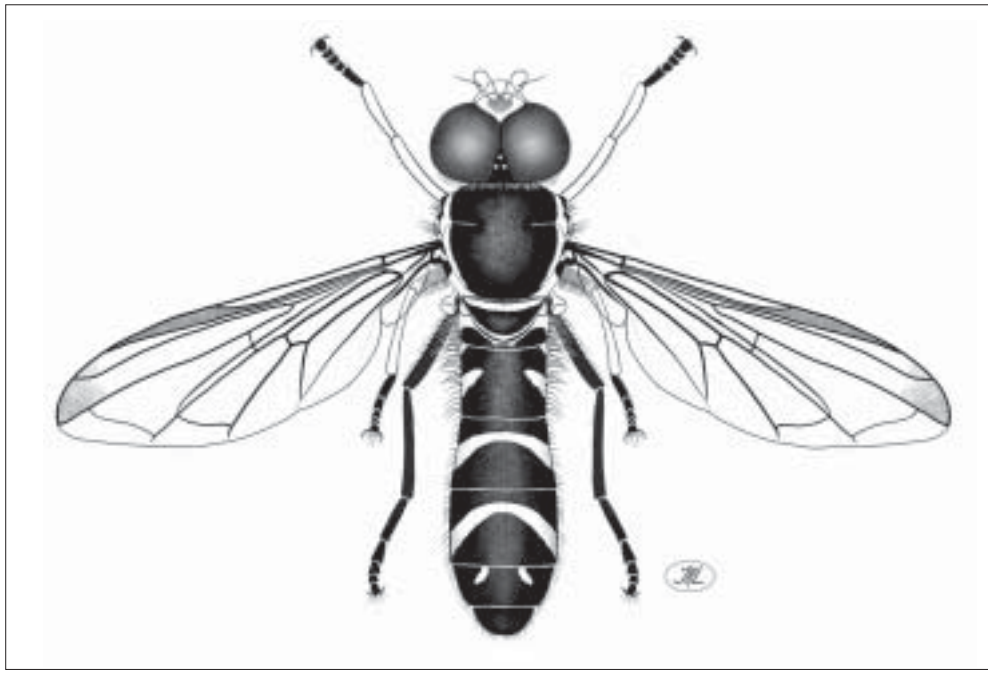

Fig. 1: *Allograpta alamacula* spec. nov., male, habitus, dorsal.

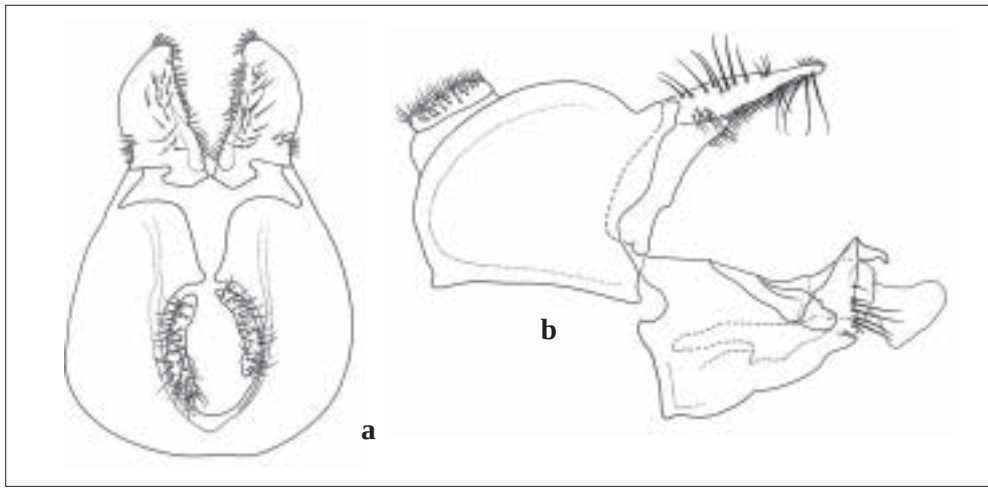

Fig. 2: *Allograpta alamacula* spec. nov., male genitalia. – a: 9th tergum and associated structure, dorsal view; – b: male genitalia, lateral view.

tubercle distinct, convex; gena yellow; lunule black medially, yellow laterally; frontal triangle yellow laterally, brown medially, black pilose; frons black except narrowly yellow laterally, shiny on ventral 1/3, dull black pollinose dorsomedially; ventral triangle black, black pilose; vertex black, black pilose; occiput black, grayish-white pollinose, white pilose ventrally, yellow pollinose and brownish-yellow pilose on dorsal 1/3; antenna orange except basoflagellomere brownish on dorsoapical 2/3, black pilose; arista brown; male holoptic.

Thorax: Postpronotum yellow; scutum shiny, black except yellow laterally, continuously yellow from postpronotum to scutellum, yellow pilose; postalar callus yellow, yellow pilose; scutellum convex apically, black except yellow base and margins, black pilose; subscutellar fringe absent; pleuron black except yellow dorsad to procoxa, posterior 1/3 anepisternum, dorsal half katepisternum, katepimeron, katatergum; pleuron yellow pilose; metasternum black, bare; plumula yellow, calypter yellow; halter orange. **Wing**: Hyaline except brown anteroapical macula and dark stigma; microtrichose except bare cells C, R, BM, CuP, basal half of cell R1, basal 1/3 of cell R2+3, base of cell DM and CuA1, base of anal lobe; alula broad, about as broad as cell BM, microtrichose. **Legs**: Coxae and trochanters brownish black, white pilose; pro and mesofemora yellow to brownish yellow, white pilose except black pilose dorsoapically; metafemur brown to black except yellow base, black pilose except pale pilose basally; pro and mesotibiae yellow, white pilose; metatibia black, black pilose; tarsi black, black pilose.

Abdomen: 1st tergum yellow basally and laterally, black posteromedially, white pilose; 2nd tergum black except basolateral corners yellow and with yellow oblique fasciate macula on medial 1/3, with maculae broadly separated medially, apical 1/5 shiny, basal 1/4 subshiny, elsewhere dull black pollinose, black pilose except yellowish-white pilose laterally; 3rd and 4th terga black except arcuate yellow fasciae, black pilose except pale pilose laterally; 5th tergum black except basomedial yellow vittate maculae, black pilose; 1st sternum black, shiny, white pilose; 2nd-4th sterna black medially, yellow laterally, white pilose; male genitalia (fig. 2) black, black pilose.

Length: Body, 6.7–6.8 mm; wing, 5.1–5.5 mm.

Etymology. The specific epithet refers to the dark apical spot on the wing of this species, and is a noun in the nominative singular compounded from the Latin nouns for wing (*ala*, f.) and spot (*macula*, f.).

Biology. The holotype was reared by MC from a larva feeding on immatures of the whitefly, *Aleurocanthus t-signatus* (MASKELL) (Hemiptera: Aleyrodidae), an Australian indigene, on *Acacia* spec. (CARVER & REID 1996). This is a new host record for the genus.

Remarks. *Allograpta alamacula* is very distinct due to the dark apical wing maculae, which is atypical for *Allograpta*. Also it differs from all other Australian *Allograpta* species in having the metasternum bare. The New Zealand species, *A. ventralis* (MILLER, 1921) also has a bare metasternum and a faint apical wing macula. However, *A. ventralis* is quite different, having dichoptic males and narrow petiolate abdomen.

In the key to World genera of the tribe Syrphini (VOCKEROTH 1969), the species will key out to the genus *Antillus*, a West Indian endemic, now considered a subgenus of *Allograpta*. However *A. alamacula* is quite different from that large species, which has a produced face and asymmetric male genitalia. The junior author had mistakenly identified the species as belonging to the genus *Eosphaerophoria*, but when the male genitalia were studied it was easily identified as *Allograpta* as the parameres are symmetric and fused to the sternum, and the aedeagal base is enlarged, heavily sclerotized, spiculate and rounded apically. These are the synapomorphies for *Allograpta* (VOCKEROTH 1973). Perhaps when a worldwide cladistic analysis of *Allograpta* is done, this species will be placed in a separate subgenus.

Hemilampra dichoptica THOMPSON spec. nov.

(Figs 3–4)

Type. AUSTRALIA. **New South Wales**: holotype male, Cabbage Tree Creek, 1.ii.1973, E. A. FONSECA, BM 1974-102 (ANIC).

Adult Male. Head (Fig. 3): Black except antenna orange-brown; face bare, shiny except sparsely grayish-white pollinose ventrad to antenna and dorsad to tubercle; tubercle distinct; paraface gray pollinose, white pilose; gena shiny and bare anteriorly, sparsely grayish-white pollinose and white pilose posteriorly; lunule shiny; frontal triangle subshiny, bare on ventral half, yellowish brown pi-

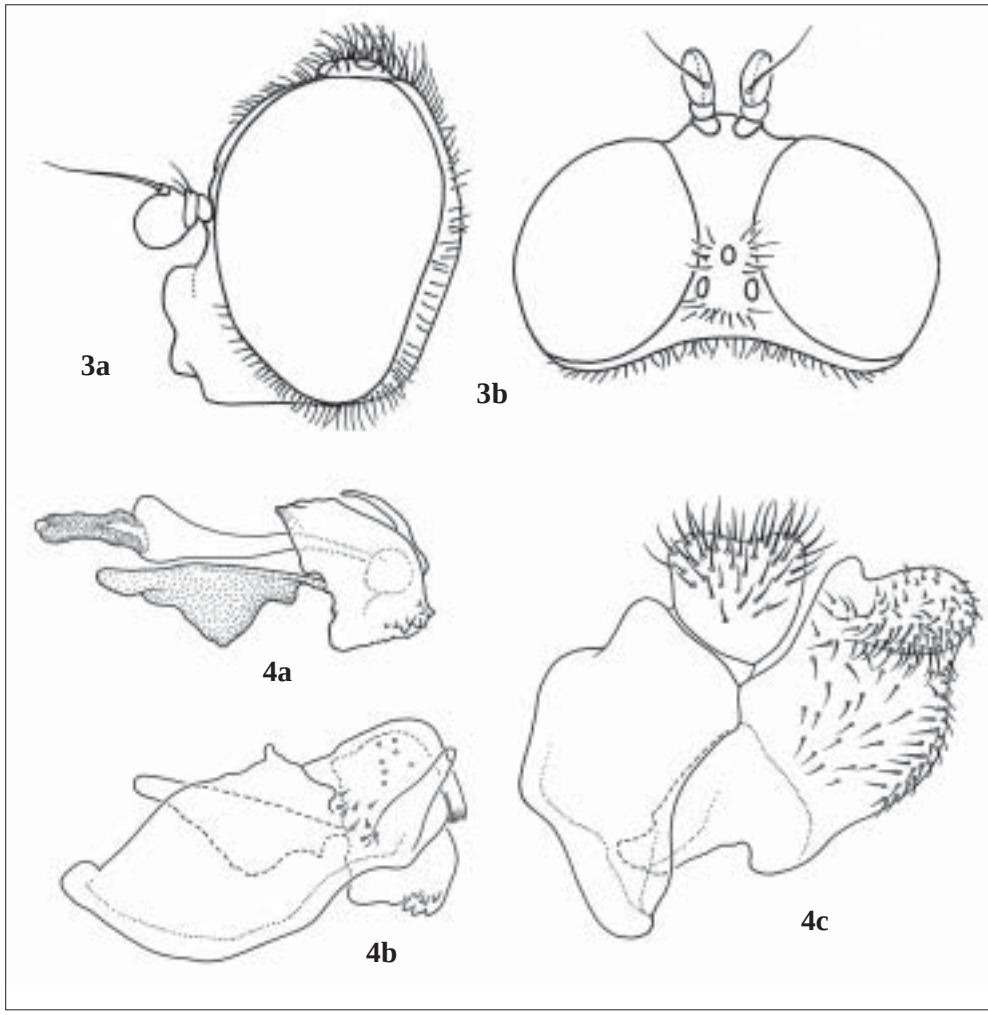

Fig. 3a–b: *Hemilampra dichoptica* spec. nov., male head. **– a**: Dorsal view; **– b**: Lateral view.

Fig. 4a–c: *Hemilampra dichoptica* spec. nov., male genitalia. **– a**: Aedeagal complex, lateral view; **– b**: 9th sternum and associated structures, lateral view; **– c**: 9th tergum and associated structures, lateral view.

lose dorsally, indistinctly rugose; broadly dichoptic, eyes separated by width of ocellar triangle; vertical triangle subshiny, yellow pilose; occiput gray pollinose, yellow pilose; antenna yellow and black pilose; basoflagellomere round.

Thorax: Black except legs partially orange and postalar callus brownish orange; postpronotum brownish pollinose anteromedially, white pollinose posterolaterally, yellow pilose; scutum shiny except brownish pollinose along anterior margin and in form of indistinct medial vitta on anterior half, brownish-yellow pilose; scutellum yellowish-white pilose, without subscutellar fringe; pleuron gray pollinose, white pilose; plumula brown; calypter brown, margins orange; halter brown. **Wing**: Light brown, entirely microtrichose; tegula black pilose. **Legs**: Coxae and trochanters brownish black, gray pollinose, white pilose; femora brownish black except apex yellow, white pilose except some black pili intermixed; tibiae orange except medial half brown, white pilose; tarsi orange, pale pilose.

Abdomen: Black; 1st tergum gray pollinose laterally, brownish pollinose medially, white pilose; 2nd-3rd terga black pollinose except shiny basolaterally, with shiny area extending along basal 2/3

laterally and basal 1/4 medially, yellowish-white pilose; 4th tergum shiny, white pilose; 1st sternum grayish-white pollinose, white pilose; 2nd-4th sterna shiny, white pilose; genitalia (fig. 4) sparsely pollinose, pale pilose.
Length: body, 5.8 mm; wing, 4.3 mm.

Etymology. The species epithet, *dichoptica*, is an adjective referring to the characteristic condition of the eyes in the male.

Remarks. *Hemilampra dichoptica* differs from all other *Hemilampra* species in being broadly dichoptic and having the anterior anepisternum pilose.

Acknowledgements

We thank Ebbe Nielsen, CSIRO Entomology(ANIC), Canberra; Richard Vane-Wright, Nigel Wyatt and John Chainey, The Natural History Museum, London (BMNH); for permission to study material in their care. The figures were done by Taina Litwak. We also thank Drs. Don Colless, CSIRO Entomology, Canberra; Stephen Gaimari, Department of Entomology, Smithsonian Institution, Washington; Steven W. Lingafelter, Allen Norrbom, and Michael Schauff, Systematic Entomology Laboratory, USDA, Washington; David Yeates, The University of Queensland, Brisbane; for their critical reviews of the manuscript.
The senior author did the biology and is responsible for the species attributed to her; the junior author did the taxonomy.

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Authors' addresses

Mary Carver
CSIRO Entomology
GPO Box 1700
Canberra, ACT 2601
Australia
E-mail: maryc@ento.csiro.au

F. Christian Thompson
Systematic Entomology Laboratory
ARS, USDA, NHB-169
Smithsonian Institution
Washington, D.C. 20560
E-mail: cthompso@sel.barc.usda.gov

The paper was accepted on 12 January 2003.
Editum: 15 December 2003.